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The future of community nursing- Hospital in the Home

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Abstract

With an increasing ageing population who often have multiple long term conditions, there is a growing need to provide an alternative type of care to the traditional hospital based model. Hospital in the Home is a model that provides integrated care for patients in their home. The @home service was established in 2013 by Guy's and St Thomas's Trust. The service provides healthcare in patients' home, supporting early discharge from hospital as well as preventing avoidable admissions and readmissions saving valuable hospital bed days and reducing length of stay.

This article describes the service available with the use of a case study of a 78-year-old lady who was referred by the London Ambulance Service with exacerbation of Chronic Obstructive Pulmonary Disease (COPD). This case study highlights the ability to assess, treat and manage an acutely unwell patient with newly diagnosed heart failure in the community without the need for hospitalisation. This type of integrated care model with a multidisciplinary team is a feasible alternative to the traditional models of care in both the acute and community settings.

Keywords: Integrated care, hospital in the home, community, acute care

Introduction

As the population lives longer, individuals are more likely to develop long term conditions such as cardiovascular disease- both coronary heart disease and stroke, diabetes mellitus and Chronic Obstructive Pulmonary Disease (COPD). Often in those with long-term conditions, there is a need for medical treatment and interventions for acute exacerbations (angina in coronary heart disease and chest infections in those with respiratory conditions for example). Traditionally, these patients have been hospitalised and in some instances, their only reason for remaining in hospital is the need for regular intravenous antibiotics. An alternative model of treatment to the traditional hospital setting is based in individuals' homes and it has been shown to be both clinically effective and financially cost-effective (Van Donk et al 2009; Montalto et al 2010a). Within the NHS, there are ongoing fiscal constraints on healthcare services. This combined with an ageing population who have multiple comorbidities are the biggest challenges currently facing healthcare providers in the United Kingdom. There is now evidence supporting this model as an alternative to hospital based treatment for acute presentations (Leff, 2013). Hospital in the Home has been developed as a way of managing patients in the community and avoiding hospital admission or expediting discharge from hospital (Caplan et al 1999; Montalto et al 2010b; Varney et al 2014). Hospital in the Home programmes have been reported to be at least equivalent to standard acute hospitalisation in terms of patient mortality and morbidity (Utens et al 2013) and often report improved patient satisfaction whilst associated with reductions in mortality, readmission and cost (Spiliopoulos et al. 2008). A more recent meta-analysis has demonstrated that hospital in the home is associated with a reduction in mortality and hospital readmissions as well as demonstrating increased patient and carer satisfaction (Caplan et al., 2013).

In London, the @home Service was developed for patients living in Lambeth and Southwark by Guys and St Thomas's Trust, who are over the age of 18 and who would otherwise be or be at risk of a hospital admission offering integrated care and reducing fragmented care (Shaw et al 2011). Since its current inception in 2013, the @home service has treated just under 8000 patients, averaging 350 new referrals per month (Lee & Titchener 2016). The service provides acute healthcare in patients' home (examples include pulmonary oedema and community acquired pneumonia), supporting early discharge from hospital as well as preventing avoidable admissions and readmissions saving valuable hospital bed days and reducing length of stay. More recently, the team began providing overnight palliative care for patients requiring End-Of-Life care.

Recently, the Chief Nurse and NHS England have stated that more money needs to be spent on caring for patients in their own home rather than cash being pumped into "expensive buildings". The Kings Fund (2017) concurs with this in its latest paper on "Priorities for the NHS and social care in 2017", agreeing that more care should be delivered in people's homes and plans to provide integrated care should be accelerated. The @home service is already delivering an integrated model of care very successfully by providing a proactive multidisciplinary health and social care model. Distinct for traditional district nursing model, the advantage of the @home service is that this bespoke multidisciplinary team offers patient-centred acute care in their place of residence and operates 365 days of the year, 24 hours a day.

The referral system is via a single point access and is practitioner-to-practitioner referral with a 2-hour response for urgent medical assessment. The other unique aspect is that the model is shared or total medical responsibility for the patient. The @home team provide daily visits up to 4 times a day, for 3 to 7 days and offers intensive nursing, physiotherapy

and occupational therapy input during the treatment period. Domilicary visits by a consultant or @home GP can also be arranged when required. The team work together to assess, initiate and implement treatment and daily meetings occur to discuss patient progression. A rapid response 'out of hours' urgent/crisis nursing care service is also available and provides prompt clinical support and nursing care at short notice, through proactive visits, or in response to an unscheduled request.

In terms of their previous clinical roles and experience, @home nurses have been employed in senior roles within acute hospital settings such as emergency departments and medical assessment units and are therefore highly skilled practitioners with experience of caring for acutely unwell patients. Nurses are required to have, or be undertaking, a Master's degree in advanced practice and have completed modules in advanced physical assessment skills and also have completed a non-medical prescribers course. This in-depth level of knowledge and skills in advanced practice is critical as one of the key aspects leading to the success of the @home model is assessing and managing a wide range of conditions and often patients have multiple comorbidities and polypharmacy. The types of long-term conditions the @home team assess on a daily basis include cellulitis, falls, COPD, unstable diabetes, dehydration, palliative Care, gastroenteritis, community acquired pneumonia, heart failure, deep vein thrombosis, Infected foot ulcers, Hyperemesis Gravidum, Post-operative surgery, pyelonephritis, urinary tract infection and viral illness. The @home team also care for patients who refuse to go in to hospital, but have full capacity (even if hospital treatment would be the best option), therefore at times, treating extremely sick patients. This includes patients who may be acrophobic, or may have other mental health problems resulting in them not wanting to engage with services outside of their own home.

For the management of these conditions, the @home can provide many interventions including rapid assessment, diagnosis, treatment and evaluation, home assessment and input by community geriatrician, where appropriate (providing team with support and treatment plans), medication titration, intravenous and subcutaneous fluids, intravenous antibiotics, intravenous Frusemide and treatment for respiratory disorders including nebulisers, antibiotics and physiotherapy. As outlined in table 1, the services provided are equivalent to those offered in an acute setting with the ability to initiate treatment quickly and within the patient's home. For patients who are identified as End-of-Life or requiring palliative care, the Pal@home service is available. The team can undertake an urgent assessment, provide stat doses of medication, review or monitor new symptoms, and manage and set up syringe drivers. The @home team provide a full multidisciplinary service for a wide range of conditions and offer many interventions (Table 1).

Table 1: Overview of interventions provided by @home team:

- High intensity daily clinical monitoring with short-term intervention in an acute episode of ill health in a safe and timely manner by providing up to 4 times a day visits.
- Provide urgent clinical assessment for acutely unwell patients, ECG (electrocardiogram), bladder scans, urgent bloods
- Initiating treatment and ongoing monitoring, intravenous therapy, subcutaneous hydration, ongoing blood, oxygen therapy, nebulisers
- Physiotherapy and Occupational Therapy intervention
- Environment check /safeguarding checks

The other important aspect of this alternative community service, is that the @home team take referrals from many sources including the local hospitals and GPs, along community services such as the district nursing team and the care home support team (Lee and Titchener 2016). One relatively unique referral pathway is from London Ambulance Service who can refer from a call-out directly to the @home team. From a NHS resource perspective, use of the @home services increases inpatient capacity and resources and supports overall Trust and Clinical Commissioning Group objectives as well as improving hospital and community processes.

One of the key aspects of any change to patient services, is whether the model of care is acceptable to patients and the @home service has been evaluated. A total of 1426 questionnaires were in 2015/16 and 206 were returned (Facultad, 2017). Patient satisfaction was examined via a questionnaire and demonstrated that the @home model met patient preference for home care compared to being admitted to hospital.

Respondents also reported that it offered them an enhanced patient choice. In terms of symptoms, patients reported reduced pain, anxiety, confusion and delirium as well as a reduction in their functional disturbance. The majority of patients would recommend the @home service (97%) and 99% were very satisfied/satisfied with the service. Several patients and family members also recorded positive comments in a free text section.

An example of feedback from a patient: *'Service in conclusive with assisting in a quick recovery, being at home in a family environment is important'.*

One relative commented: *'I cannot praise this service highly enough as without this service my 89- year-old mother would be taking up a hospital bed and not getting anything like the service she received from this team.'*

Patients and relatives also reported that they felt safe and that the family felt involved and supported by the @home team. Overall, the evaluation although comprising of a small sample, demonstrated the physical, psychological and social benefits of treating patients in the comfort of their own home with reduced functional disturbance.

To highlight the types of patients seen by the @home team and the complexity of each presentation, below is a case study.

A 78-year-old lady (we will refer to as Mrs T to maintain her anonymity) was referred by the London Ambulance Service with exacerbation of COPD. The @home team arrived at her home where she lives on her own, and the ambulance crew had administered a salbutamol nebuliser. Her presenting complaint was that she had reduced mobility over the previous few days due to increase in shortness of breath (SOB).

The @home nurse undertook a comprehensive physical assessment. This assessment followed the medical model and as advised by Bates (2013); the look, listen, feel approach was used. This approach is then built upon further with the inspection, palpation, auscultation and percussion framework, which all @home nurses are trained and competent to perform. On inspection, physical examination revealed above- knee bilateral pitting oedema, a productive cough with white frothy sputum and a raised JVP (Jugular Venous Pressure). On auscultation, audible bilateral wheeze bi-basal crackles were noted along with marked SOB on minimal exertion. Through a structured, comprehensive history taking, Mrs T also described getting breathless at night and this was differentially diagnosed as Paroxysmal nocturnal dyspnoea (PND) although she had no previous history of cardiac disease.

Given her clinical signs and symptoms, the working diagnosis was heart failure with a possible chest infection. Based on this diagnosis and awaiting confirmation from formal diagnostic tests, the treatment plan was for oral furosemide 40 milligrams, oral antibiotics and steroids. Nebulisers (iprotropium bromide and salbutamol) were also prescribed. To confirm the diagnosis, blood tests were also undertaken and confirmed within a few hours that Mrs T had a raised BNP that is suggestive of heart failure. The @home team nurses arranged for a transthoracic echocardiogram and chest radiograph to be done following a discussion with the @home Consultant Geriatrician. Transport was also arranged by the @home team for Mrs T to attend these appointments. The echocardiogram confirmed a diagnosis of left ventricular failure and the chest x-ray demonstrated Community Acquired Pneumonia. Based on these diagnoses, the treatment was changed to intravenous furosemide and antibiotics in line with the NICE guidelines for heart failure and community acquired pneumonia (National Institute for Health and Care Excellence, 2016, 2014). The results of the various diagnostic tests confirmed that the nurses advanced assessment skills and initial differential diagnosis were correct.

The @home team continued to undertake daily reviews in Mrs T's home and after 5 days of treatment, Mrs T was showing clinical signs of improvement and her medication was changed from intravenous furosemide to oral diuretics. A cardiac review was requested prior to discharge and Mrs T was referred to the community heart failure team for ongoing monitoring.

The other interventions undertaken by the @home team included:

- (i) an assessment by the @home pharmacist to ensure medications compliance and understanding of current condition and management of new regime,

- (ii) a review by the @home occupational therapist and physiotherapist and this resulted in devising an exercise programme and an ongoing referral to community physiotherapy for practice with outdoor mobility (something the patient would only achieve prior to this with the help of the daughter and wheel chair) and the final intervention was,
- (iii) discussion with the local parish priest as Mrs T had expressed a desire to attend mass but was unable to. The priest was contacted and agreed to visit Mrs T at home until she was well enough to attend church. Mrs T was discharged from the @home team's care on day 5 to the various community teams including her GP and heart failure community nurse.

Discussion

This case study highlights the ability of the @home team to assess, treat and manage a patient with newly diagnosed heart failure and community acquired pneumonia in their home. The case study demonstrates the ability to provide a comprehensive package of care in a person's home that is multi-disciplinary. Both in the acute phase of illness that included several members of the @home MDT as well as then in the chronic stage where engaging community practitioners (e.g. heart failure community nurse) was appropriate. The model is medicalised yet still holistic, this is echoed by the treating of Mrs T's physical symptoms and also the referral to the priest for spiritual care. There are several benefits to this model of care- it is an effective and efficient integrated partnership that reduces emergency department attendances, allows the ambulance crew to go to their next call and reduces costs associated with hospital admission. We are planning a cost analysis evaluation with a health economist comparing this model with the traditional hospital-based model of care.

For the patient, the advantages of the @home care model are that there are improved health outcomes and it meets patients' preference for home care over hospital admission.

Traditionally Mrs T would have initially gone to the Emergency Department (ED), then been transferred to a Medical Assessment Unit (MAU) with a likely destination of a longer stay medical ward. The risk of hospital acquired infection, the risk of confusion and delirium, and the anxiety and worry of being away from home are all increased. The @home team were able to take the ED, MAU and the medical ward care and treatment directly to Mrs T's home. Student nurses also have clinical placements with the @home team and their feedback has been extremely positive (Lee et al 2015). The placements give the students exposure to a community-based clinical placement where they can witness acute care within a community setting using a MDT approach. With the emphasis on community based models of care, it is imperative that our future workforce are adequately prepared in terms of knowledge and appropriate clinical skills (Robertson et al 2014; Goodwin et al 2013).

Emergency departments have seen a yearly 10% increase in attendances, for the past 5 years (NHS England 2016). Not only is this due to the ageing population but also in the increased attendances associated with alcohol intake, lack of out of hours GP provision, cuts to mental health services and lack of the general public's awareness of services delivered locally. Emergency departments can be daunting places, the elderly can feel intimidated being treated in the same place as drunk, abusive younger people, which unfortunately is quite often the norm.

There has been a significant decrease in medical personnel applying to specialise in ED medicine, and also a number of senior nursing posts are unfilled (Dean 2016). Nationally

there has to be an alternative to the Emergency Department, locally the @home team model is successfully offering this alternative.

Community nursing and district nursing were developed for a very different era of healthcare and integrated programmes of community nursing have long been advocated (Burns et al 1996; McDonald et al 1997). As patients' healthcare needs changed, some researchers have enquired about whether competencies were needed for community health care (Ladhani et al., 2014). We would argue that this detracts from the challenges of moving healthcare from an acute setting to the community and the workforce needs to be appropriately educated to take on the challenge of assessing and managing acutely unwell patients in the community. The emphasis should be on whether the healthcare professional has the appropriate skills and knowledge to perform in this environment and the @home nurse is working in an advanced practice role with previous experience in acute settings. If more care is to occur in the community the deficit in knowledge and competencies needs to be addressed at a national level and where feasible to integrate this type of service with local district nursing. Those undertaking their District Nursing programme must undertake advanced assessment skills as part of their curriculum highlighting the changing acuity of community-based patients. From an academic perspective, Masters prepared students are able to demonstrate their knowledge and skills and are able to demonstrate their competence via a formal assessment process (Lee and Fitzgerald 2008).

Conclusion

The @home service offers an integrated local NHS 'acute' provider that is safe, responsive and flexible that also enables better utilisation of in-patient resources and delivers good clinical outcomes. From the case study, the feedback from the patient and her daughter was that they had received excellent care without having to be admitted to hospital. This case

study highlights the ability to assess, treat and manage an acutely unwell patient with newly diagnosed heart failure in the community without the need for hospitalisation. Given the ageing population, strain on resources and multiple comorbidities of patients, the @home model should be envisaged as the new viable face of community nursing.

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Key points:

1. With an ageing population, many patients now have multiple long-term conditions that require on-going management.
2. Hospital in the home offers an alternative model of care to hospital-based treatment for acute presentations.
3. The @home model offers multi-disciplinary care in patients' homes that allows daily visits up to 4 times a day for 3-7 days.
4. The case study demonstrates how the patient was assessed, treated and managed in her home for exacerbation of COPD and newly diagnosed heart failure.

Reflective questions:

1. Relating to the case study, would this model of care be appropriate for your patients and could it be implemented?
2. Reflecting on your own practice in relation to the presented case study, what skills and training do you need to develop?
3. Identify the main signs of heart failure when performing a physical assessment on a patient.
4. With patients who have concomitant cardiac and respiratory conditions such as COPD and coronary heart disease, what tests are required to differentiate between respiratory and cardiac diagnoses?